IT-600 Series

Hardware Manual

for

Linear Imager Models

(Version 1.00)

CASIO Computer Co., Ltd.

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Editorial Record

Manual Version no.	Date edited	Page	Content
1.00	September 2007		Original version

Preface

This reference manual clearly and concisely sets out the information developers need to know about the hardware features and detailed specifications on the CASIO IT-600 series with the Linear Imager integrated (hereafter referred to as “IT-600” in this reference manual unless otherwise noted), both developed for the destinations of the USA and Canada.

A newest PDA-style industrial data terminal available in two models, IT-600M30U and IT-600M30UC, offers the IP54 level of dust and water-splash proof compliant with the IEC60529 International standard, and the shock resistance to withstand a fall from a height of up to 1.2 meters (or 3.9 ft.). The pocket-sized and portable IT-600 comes with various noteworthy features including the following.

- Built-in high performance imager capable of reading industry standard bar code symbologies
- Wireless communications via Bluetooth®
- Rugged casing to allow use in extreme environments
- Original CASIO digital technology enables capturing of images in all light conditions.
- Microsoft® Windows® CE 5.0 offers reliable and real time capabilities.
- Superb quality VGA resolution color screen
- miniSD card slot for extra storage
- AC Adaptors dedicated to IT-600 are designed and built to meet the California’s latest energy efficiency standards.

1. Overview of the Products

1.1 Features

Supporting the outstanding development environment

- Windows®CE 5.0 as the built-in OS
- Visual Studio .NET 2003 (Windows®CE .NET Utilities v 1.1 for Visual Studio .NET 2003)
- Visual Studio .NET 2005
- eMbedded Visual C++ 4.0

Compatibility to various communication systems

- High speed infrared communication with IrDA Ver1.3
- Bluetooth® Version 1.2
- Serial interface with USB version 1.1 (Host/Client)

Small size, light weight (improved portability)

- Dimensions: Approx. 82 (W) x 166 (D) x 27 (H) mm or
  Approx. 6.5 (D) x 3.2 (W) x 1.1 (H) inch
- Weight: Approx. 290 g (including standard battery pack) or
  Approx. 10.2 oz. (including standard battery pack)

Improved resistance to environment

- Resistance to fall impact: up to 1.2 m (or 3.9 ft.) in height
- Dust/Water-splash proof : IP54 level (compliant with IEC60529 International Standard)

Capable of scanning industrial standard bar code symbologies

- Readable bar code symbologies : UPC-A, UPC-E, EAN8, EAN13, Codabar (NW-7), Code39, Interleaved 2of5 (ITF), MSI, Industrial 2of5, Code93, Code128(EAN128), IATA, RSS-14, RSS Limited, RSS Expanded, RSS-14 Stacked, RSS Expanded Stacked

Outstanding performance/Large memory

- High-performance CPU — Marvell® PXA270 Application Processor (run at max. 520 MHz)
- Large-capacity memory — RAM : 64 MB
  F-ROM : 128 MB (user area; approximately 60 MB)

1.2 Available Models

Table 1.1

Model no.	Linear Imager	Memory		Color touch panel display	Digital camera	Bluetooth module
		RAM	FROM			
IT-600M30U	Yes	64 MB	128 MB	Yes	No	Yes
IT-600M30UC	Yes	64 MB	128 MB	Yes	Yes	Yes

1.3 Options

Table 1.2 shows the dedicated options available for the IT-600 series.

Table 1.2

Product	Model No.	Description
Cradle	HA-D60IO	USB Cradle (with Host/Client)
	HA-D62IO	Ethernet Cradle
Battery pack	HA-D20BAT	Lithium-ion battery pack (1,850 mAH)
	HA-D21LBAT	Large-capacity lithium-ion battery pack (3,700 mAH)
Battery charger	HA-D30CHG	Cradle-type Charger
	HA-D32DCHG	Dual Battery Charger
CF Card Extension Unit	HA-D94CFU2	For CF memory card on the back of the IT-600
AC adaptor	AD-S42120BE	DC12V, 3.5A. For HA-D60IO, HA-D62IO, and HA-D32DCHG. Input from 100 to 240VAC. See note.
	AD-S15050BE	DC5V, 3A. For HA-D30CHG. Input 100 to 240VAC (with US power cord). See note.
Cable	DT-380USB	USB cable for cradle, cable length 2.0 m
Hand Belt	HA-D95HB2	Hand belt to hold the IT-600

Note:
The AC adaptor is in compliance with California's Appliance Efficiency Regulations (Title 20, Division 2, Chapter 4, Article 4, Sections 1601 to 1608).

1.4 Accessories

The following accessories are accompanied in each individual carton box of IT-600 series.

Table 1.3

Accessory	Q'ty	Remark
User's guide	1	In English
Stylus	1	
Large-capacity battery pack cover	1	Required when HA-D21LBAT is installed.
Neck strap	1	
Touch screen protect sheet	1	

1.5 External Views

1.5.1 IT-600

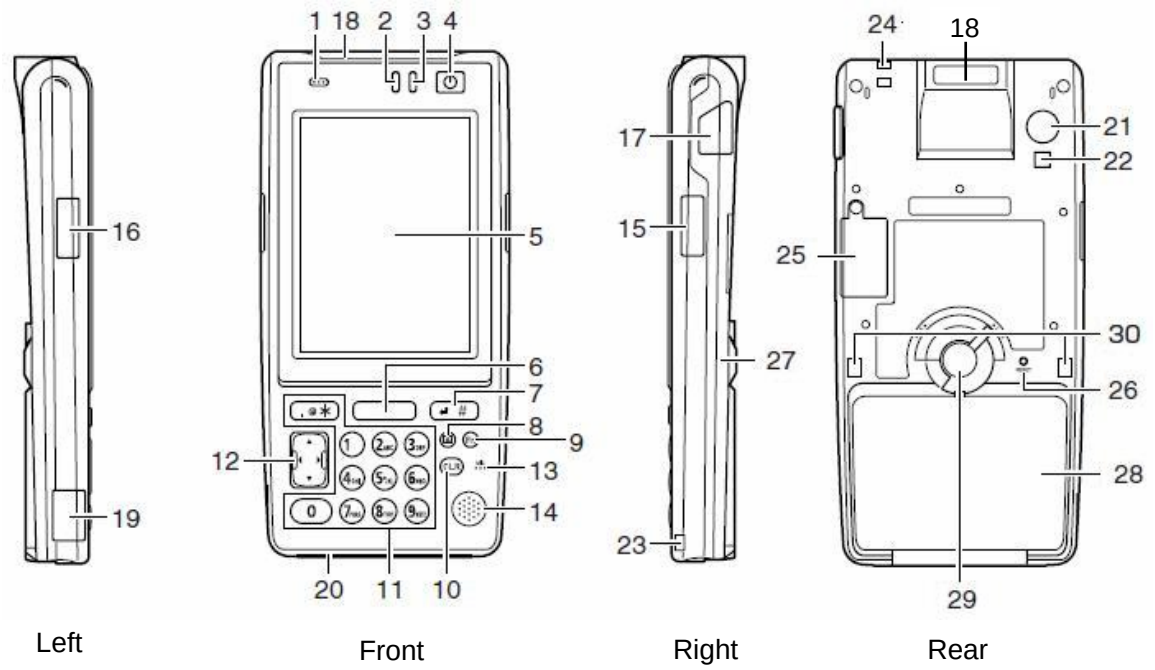


Fig 1.1

See Table 1.4 for the descriptions for each referenced part on the terminal.

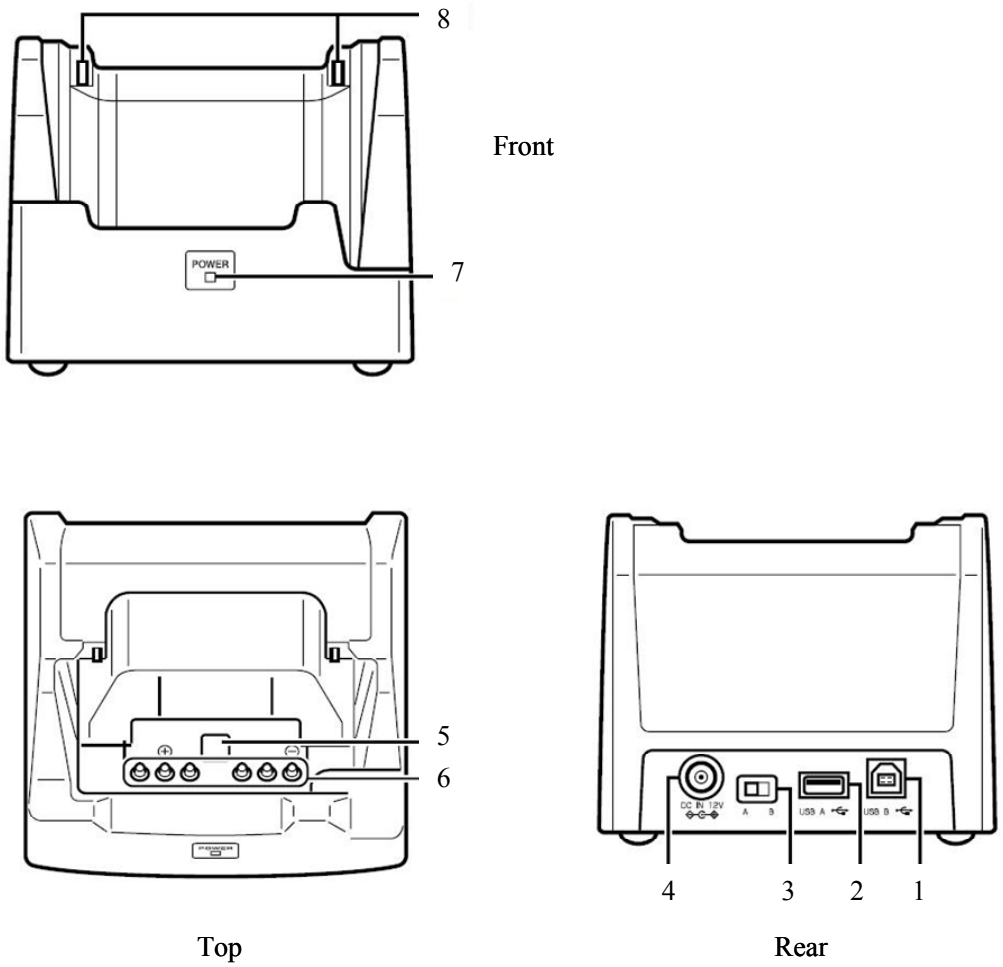
Table 1.4 Names of parts

No.	Name	Description
1	Buzzer	Sounds a buzzer.
2	Indicator 1	Orange : Charging the battery pack. Green : Charging the battery pack complete. Red : Battery pack is abnormal or the surrounding temperature is out of the range.
3	Indicator 2	Flashes in blue when operating via Bluetooth. Lights in green when reading a bar code successfully or in red when alarming (programmable).
4	Power Key	Turns the power on and off.
5	Touch Screen	Displays text and operating instructions. Also used to operate the Handheld Terminal and enter data using stylus provided.
6	Center Trigger Key	Used to perform bar code reading. Can be assigned an arbitrary function.
7	Execute Key	Press when finishing entering numerical values or when moving to the next step.
8	Text Key	Press when switching to the text input mode.
9	Fn Key	Used to make various settings in combination with the numeric keys or when starting a pre-registered application.
10	CLR Key	Used to clear one letter to the left of the input key.
11	Numeric Keys	Used to enter numbers or letters.
12	Cursor Key	Perform the same functions as up, down, left and right arrow keys on PC keyboard.
13	Microphone	Used to input a sound including voice.
14	Speaker	Alarms and voice messages are output here. Voice messages are not output from the speaker when a headset is connected to the headset jack. (The sound of camera shutter is always output from the speaker.)
15	Trigger R Key	Used to perform bar code reading.
16	Trigger L Key	Used to perform bar code reading.
17	Headset Jack	A separately sold headset can be connected here.
18	Reader Port	Emits an LED light that reads bar codes.
19	IR Port	Used for communication with another Handheld Terminal.
20	Power Supply/Charge Terminals	Used to supply power to the Handheld Terminal and to charge the battery pack from Cradle and Cradle-type Charger.
21	Digital Camera	Used to capture photographs, images.
22	LED Light	Used to light up an object when capturing with the digital camera.
23,24	Strap Holes	Used to attach the strap.
25	Extension Port	Provided for future extension.
26	Reset Switch	Used to reset the terminal.
27	miniSD Card Slot	Provided for installing a miniSD card by removing the battery pack.
28	Battery Pack Cover	Used to cover the battery compartment that holds the battery inside.
29	Battery Pack Cover Lock Switch	Used to lock the battery cover and to release.
30	Cradle Mount Holes	Used to mount the Handheld Terminal to separately sold cradle.

1.5.2 HA-D60IO USB Cradle

The following external views show the HA-D60IO USB Cradle. Refer to Table 1.5 for each referenced part on the HA-D60IO.

Views



Front

Top

Rear

Fig 1.2

Table 1.5 Names of parts

No.	Name	Description
1	USB Client Port	Used to transfer system data and file data (download, upload) by connecting the Cradle to a PC using a USB cable (DT-380USB). A dedicated driver must be installed in the PC before connecting the Cradle to the PC.
2	USB Host Port	Used to connect a corresponding USB peripheral device.
3	Selector Switch	Used to switch between the USB host port and USB client port.
4	AC Adaptor Jack	Connect the dedicated AC adaptor (AD-S42120BE) here.
5	Terminal Detect Switch	This switch detects terminal when it is mounted correctly in the Cradle.
6	Power Contacts	Power is supplied to the terminal via these contacts.
7	Power Indicator Lamp	This lamp indicates the power status and the mounting status of the Handheld Terminal. Off : Handheld Terminal is mounted. Green : Power on and the Handheld Terminal is mounted correctly.
8	Mount Hooks	These hooks are used to stabilize the terminal when mounting it on the cradle.

1.5.3 HA-D62IO Ethernet Cradle

The following external views show the HA-D62IO Ethernet Cradle. Refer to Table 1.6 for each referenced part on the HA-D62IO.

Views

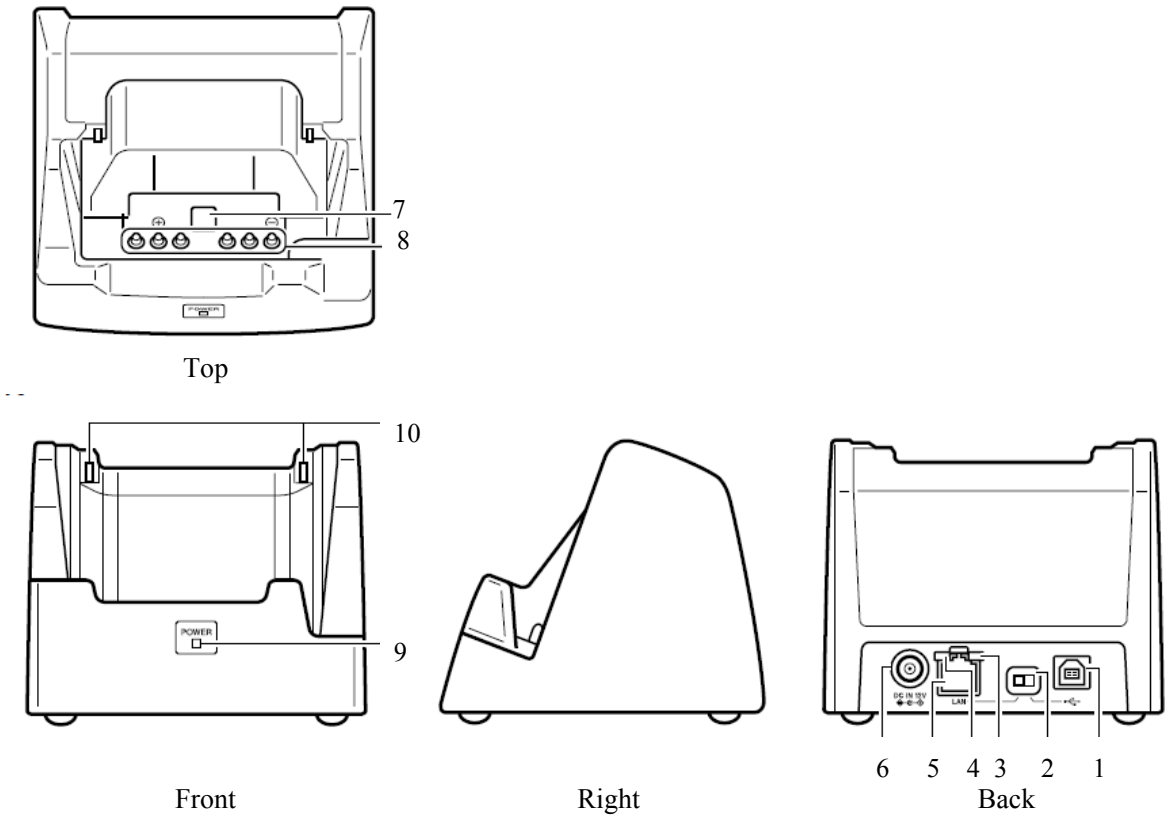


Fig 1.3

Table 1.6 Names of parts

No.	Name	Description
1	USB Client Port	This port is used to transfer system data and file data (download, upload) by connecting the Ethernet cradle to a PC using a USB cable (DT-380USB). A dedicated driver must be installed in the PC before connecting the Ethernet cradle to the PC.
2	Selector Switch	This switch is used to switch between a USB connection and a LAN connection.
3	LAN Connection Status LED	This LED shows the status of the LAN connection. Off : LAN cable not connected correctly. Lit Green : LAN cable connected correctly.
4	LAN Communication Status LED	This LED shows the LAN operation status. Off : No communication. Blinking Green : Communication in progress.
5	LAN Port	This port is used for connecting the cradle to a computer or hub over a LAN cable so that system data and file data can be transferred (uploaded or downloaded). Special driver software must be installed in the IT-600.
6	AC Adaptor Jack	Connect the dedicated AC adaptor (AD-S42120BE) here.
7	Terminal Detect Switch	This switch detects terminal when it is mounted correctly in the Cradle.
8	Ethernet Cradle Contacts	Power is supplied to the IT-600 via these contacts.
9	Power Indicator LED	This LED indicates the power status and the mounting status of the IT-600. Off : IT-600 is not installed. Or, the AC adaptor is not connected. Green : Ethernet cradle turned on, and IT-600 correctly set in the cradle.
10	Mount Hooks	Use these hooks to lock the IT-600 into the Ethernet cradle.

1.5.4 HA-D30CHG Cradle-type Battery Charger

The following external views show the HA-D30CHG Cradle-type Charger. Refer to Table 1.7 for each referenced part on the HA-D30CHG.

Views

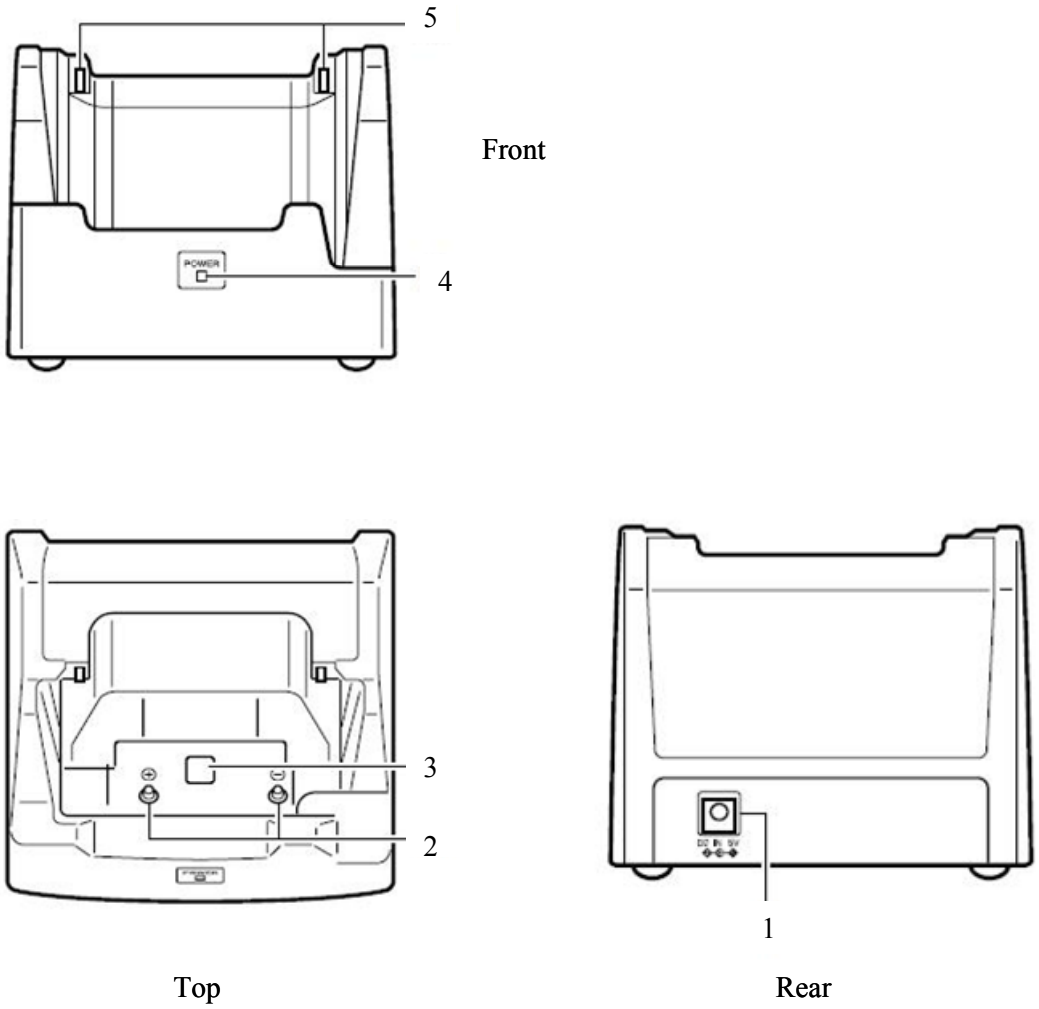


Fig 1.4

Table 1.7 Names of parts

No.	Name	Description
1	AC Adaptor Jack	Connect the AC adaptor (AD-S15050BE) here.
2	Terminal Detect Switch	This switch detects terminal when it is mounted correctly in the charger.
3	Power Contacts	Power is supplied to the Handheld Terminal via these contacts.
4	Power Indicator Lamp	This lamp indicates the power status and the mounting status of the Handheld Terminal. Off : Handheld Terminal is not mounted. Green : Power is on and the Handheld Terminal is mounted correctly.
5	Mount Hooks	These hooks are used to stabilize the Handheld Terminal when mounting it on the charger.

1.5.5 HA-D32DCHG Dual Battery Charger

The following external views show the HA-D32DCHG Dual Battery Charger. Refer to Table 1.8 for each referenced part on the HA-D32DCHG.

Views

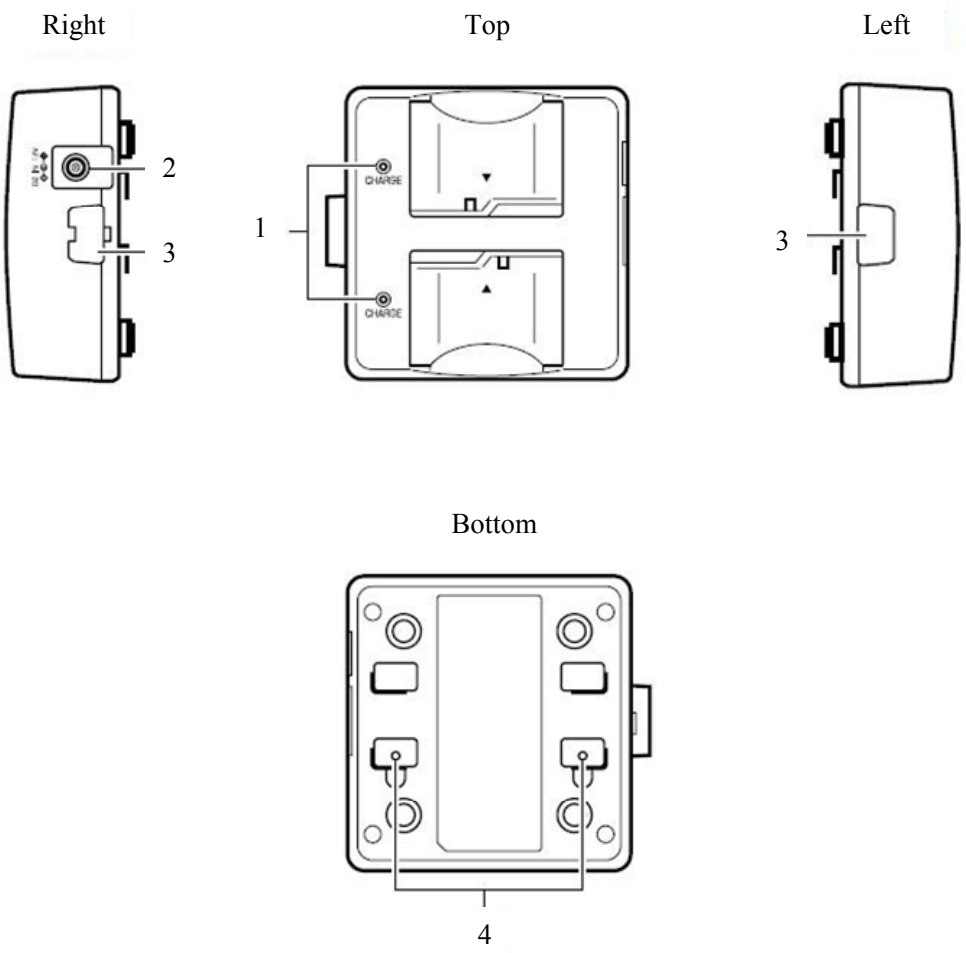


Fig 1.5

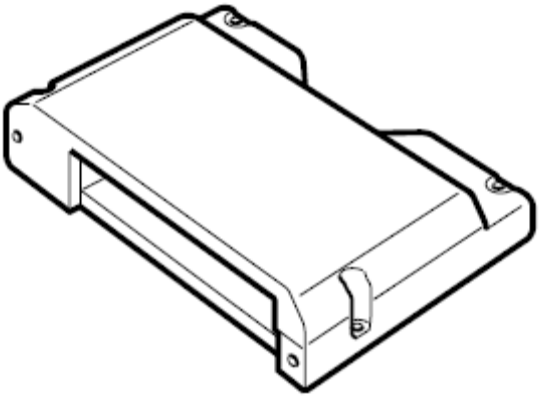
Table 1.8 Names of parts

No.	Name	Description
1	Charge indicator lamps	These lamps indicate the charge status of each battery pack. Off : Not charging Red : Charging Red Flashing : Battery pack problem Green : Charging complete
2	AC adaptor jack	Used to connect the dedicated AC adaptor (AD-S42120BE) here.
3	Dual battery charger connection port	Used to connect another Dual Battery Charger at side.
4	Connection bracket attachment holes	The connection bracket attaches here when you connect another Dual Battery Charger.

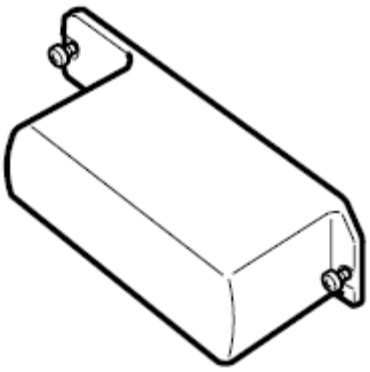
1.5.6 HA-D94CFU2 CF Card Extension Unit

The following external views show the HA-D94CFU2 CF Card Extension Unit and its cover.

Views



CF Card Extension Unit



Cover

Fig 1.6

1.6 Device Configuration Diagram

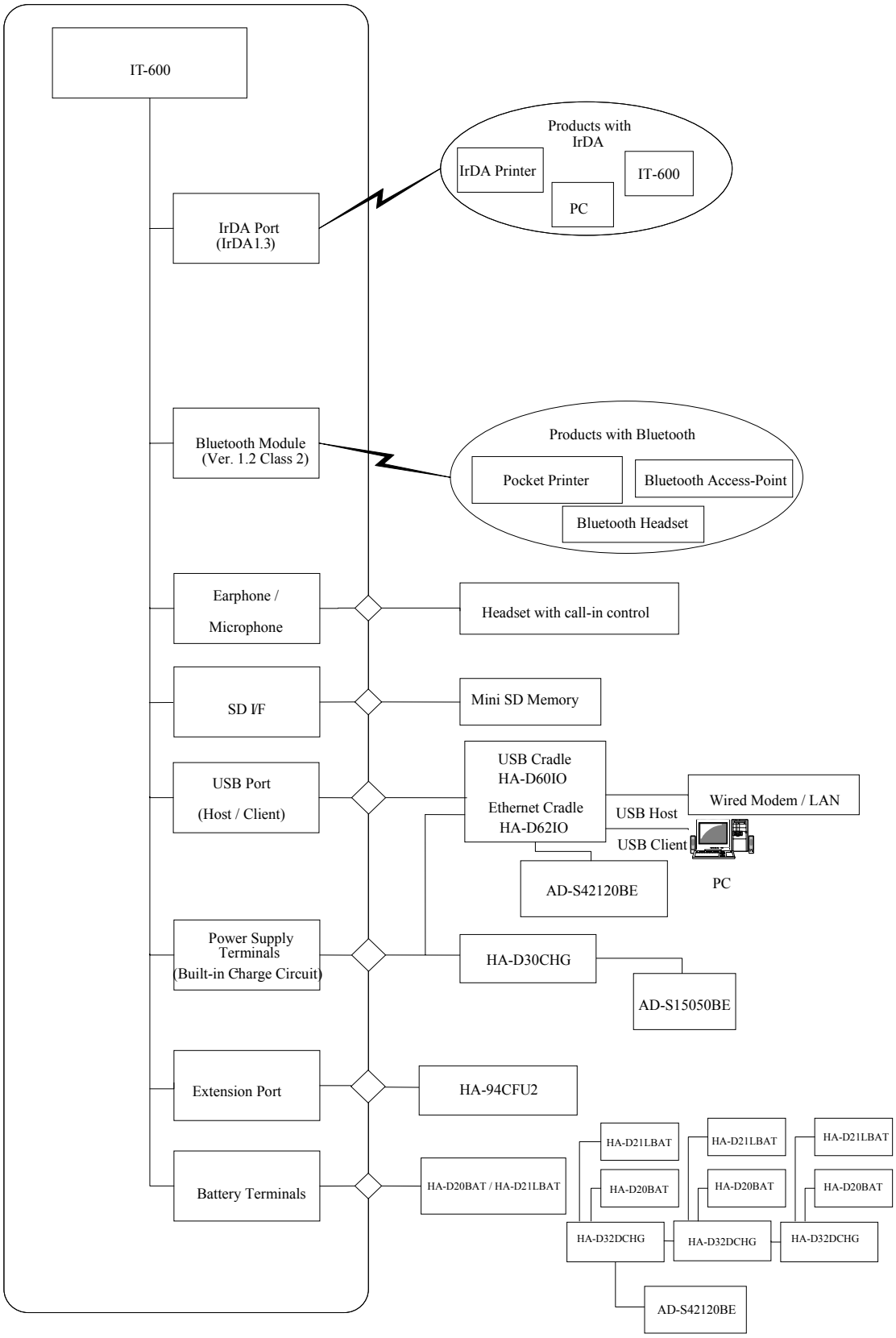


Fig 1.7

2. Hardware Specifications

2.1 IT-600

Tables 2.1 and 2.2 explain about the hardware specifications of IT-600 series including IT-600M30U and IT-600M30UC.

Table 2.1

Item		Specification	Remark
CPU, Memory			
	CPU	Marvell® PXA270 Application Processor	Operating clock; max 520 MHz
	RAM	64 MB	
	FROM	128 MB (user area; approx. 60 MB)	
Linear Imager			
	Type	CMOS bi-linear image sensor	
	Wave length	617 nm	
	No. of scans	200 per second or faster (automatic adjustment)	
	Resolution	0.127 mm	
	PCS	0.25 or more	
	Readable distance	Approx. 60 to 300 mm	
	Readable width	Max. 46 mm	When the readable distance is at 60 mm.
		Max. 200 mm	When the readable distance is at 300 mm.
	Daylight for scanning	50,000 Lux or less	
	Readable 1D bar code symbologies	UPC-A, UPC-E, EAN8, EAN13, Codabar(NW-7), Code39, Interleaved 2of5 (ITF), MSI, Industrial 2of5, Code93, Code128, (EAN128), IATA, RSS-14, RSS Limited, RSS Expanded, RSS-14 Stacked, RSS Expanded Stacked	
Vibrator		Yes (for indications of scanning completion, VoIp call-in)	
Display			
	Display device	3.7-inch transflective TFT color LCD	
	No. of dots	480 (horizontal) x 640 (vertical)	
	Dot pitch	0.117 (horizontal) x 0.117 (vertical) mm	
	Gradation	65,536 colors	
	Display font	Scalable font	
	Backlight	LED	
Indicator			
	LED	2 pcs (in 3 colors)	Left: battery charge status Right: programmable

Continue.

Input				
	Keyboard		Numeric (Alphabet) keys, CLR key, Execute key, Fn key, Text key, Cursor key	
	Control keys		Power ON/OFF key, Reset switch	
	Trigger keys		Trigger R key, Trigger L key, Center trigger key	
	Touch panel		Yes	
Infrared interface				
	Standard		IrDA ver.1.3 compatible	
	Communication process		Half duplex	
	Synchronization		Start and stop bits, frame method	
	Baud rate (in bps)		9600, 19200, 38400, 57600, 115200, 4M	
	Comm. range		0 (contact) to 0.3 m	
Bluetooth				
	Standard		Bluetooth® Specification Ver.1.2	
	Comm. range		Approx. 3 m	Vary depending on the environment
	Output power		Max. 3 dBm (PowerClass 2)	
USB				
	Host	Baud rate	Full speed (12 Mbps)	
			Low speed (1.5 Mbps)	
		Power to an external device	5V±5% (maximum 500 mA)	See note on page 22.
	Client	Baud rate	Full speed (12 Mbps)	
Extension port			Connector for HA-D94CFU2	
SD card slot			miniSD memory card	In the battery compartment.
Terminals for USB Cradle		Layout	1 2 3 4 5 6 7	
		Description	See Table 2.2	
Headset jack			4 poles in rounded shape	
Speaker			Monaural	
Microphone			Monaural	
Digital camera (IT-600M30UC)				
	Number of pixels		Approx. 1,000,000 pixels	
	Device		1/4.5-type CCD color	
	Aperture		F3.5/F7.0 (2 steps switchover)	
	Focal distance		f = 3.29 mm (fixed)	
	Image capture range		30 cm to ∞	
LED light				
	Brightness		3300 mcd	
Power				
	Operation		Lithium-ion battery pack (HA-D20BAT or HA-D21LBAT)	
	Memory backup		Lithium battery (rechargeable) on board	
	Battery capacity		1,850 mAH (HA-D20BAT) 3,700 mAH (HA-D21LBAT)	

Continue.

	Operating period	Approx. 11 hours (with HA-D20BAT)* Approx. 22 hours (with HA-D21LBAT)*		*; based on the ratio of cyclic operation of "Standby:Calculation:Scan" at 20:1:1 when the CPU speed is set to auto power save mode and the backlight is turned off.
	Memory backup period	RAM : Approx. 10 minutes, Built-in clock : Approx. 72 hours		- Lithium battery pack is fully charged. - At room temperature.
	Battery pack charge period	Approx. 4 hours for HA-D20BAT Approx. 7 hours for HA-D21LBAT		- The power on the IT-600 terminal is turned off. - At room temperature - The dedicated AC adaptor is used to power the IT-600 terminal via battery charger or cradle.
	Memory backup battery charge period	Approx. 4 days		- Time period until when the battery is fully charged. - Battery pack is being installed. - At room temperature.
	Memory backup battery rated capacity	10 mAh		
	Method to charge memory backup battery	Power supply by cradle	Yes	
		By battery pack (when terminal's power on)	Yes	
		By battery pack (when terminal's power off)	Yes	
Dimensions and weight				
	Dimensions	Approx. 166 (D) x 82 (W) x 27 (H) mm Approx. 6.5 (D) x 3.2 (W) x 1.1 (H) inch.		
	Weight	Approx. 290 g (or approx. 10.2 oz.)		Including standard battery pack installed.

- Terminal layout and the description for the SD Card slot

Table 2.2

Terminal no.	Signal	Description	Direction
1	V BUS	Power from USB cradle	OUT/IN (see note)
2	V CRADLE	Power supply/Charge to terminal	-
3	D +	USB D +	IN/OUT
4	NC		-
5	USB_ID	Switch-over between USB host and USB client	IN
6	D -	USB D -	IN/OUT
7	GND	GND	-

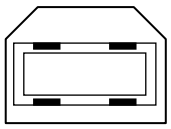
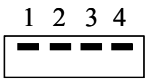
Note:

When the selector switch on the HA-D60IO is set to "USB Host", this terminal outputs the power ON/OFF control signal issued by the IT-600 to the cradle. Or, when it is set to "USB Client", the terminal is used to input the USB power (V BUS) from the cradle to the IT-600.

2.2 HA-D60IO

Tables 2.3 and 2.4, and Fig. 2.1 explain about the hardware specifications of the USB Cradle (HA-D60IO).

Table 2.3

Item			Specification	Remark
USB	Standard		USB Ver.1.1 compatible	
	Baud rate		Max. 12 Mbps (maximum)	
	Connector		 USB connector B type	1 VBus 2 – Data (D -) 3 + Data (D+) 4 GND
			 USB connector A type	1 VBus 2 – Data (D -) 3 + Data (D+) 4 GND
Power from AC adaptor	Input voltage		DC 12V ±5%	
	Current consumption		DC12V approx. 1.6A	When supplying power and transmitting data.
	Plug		EIAJ RC-5320A type 4	Center; +
	AC adaptor		AD-S42120BE	
Power	USB host	Standard	USB Ver. 1.1 compatible	
		Baud rate	12 Mbps (maximum) 1.5 Mbps (minimum)	
		Power to external device	5V±5% maximum 500 mA	
	USB client	Standard	USB Ver. 1.1 compatible	
		Baud rate	12 Mbps (maximum)	
		Layout	See Fig 2.1.	
		Description	See Table 2.4	
	Charge/Power supply terminals	Output voltage	DC5V±10%	
		Output current	2,500 mA (maximum)	
		Output current	Constant voltage method	
		Battery charge time	Approx. 4 hours for HA-D20BAT Approx. 7 hours for HA-D21LBAT	
Dimensions and weight				
	Weight	Approx. 110 (W) x 106 (D) x 93 (H) mm		
	Dimensions	Approx. 310 g		

- Terminal layout

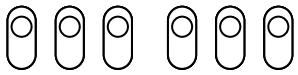


Fig 2.1

- Terminal layout and the description

Table 2.4

Terminal no.	Signal	Description	Direction
1	V BUS	Power from USB cradle	OUT/IN (see note)
2	V CRADLE	Power supply/Charge to IT-600	-
3	D +	USB D +	IN/OUT
4	USB_ID	Switch-over between USB host and USB client	IN
5	D -	USB D -	IN/OUT
6	GND	GND	-

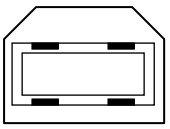
Note:

When the selector switch on the HA-D60IO is set to “USB Host”, this terminal receives the power ON/OFF control signal issued by the IT-600. Or, when it is set to “USB Client”, the terminal outputs the USB power (V BUS) to the IT-600.

2.3 HA-D62IO

Tables 2.5 and 2.6, and Fig. 2.2 explain about the hardware specifications of the Ethernet Cradle (HA-D62IO).

Table 2.5

Item			Specification	Remark
USB	Standard		USB Ver.1.1 compatible	
	Baud rate		Max. 12 Mbps (maximum)	
	Connector		 USB connector B type	1 VBus 2 – Data (D -) 3 + Data (D+) 4 GND
LAN	Communication protocol		IEEE 802.3	
	Media type		10base-T/100base-TX auto-switched	
Power from AC adaptor	Input voltage		DC 12V ±5%	
	Current consumption		DC12V approx. 1.6A	When supplying power and transmitting data.
	Plug		EIAJ RC-5320A type 4	Center; +
	Dedicated AC adaptor		AD-S42120BE	
Power	USB client	Standard	USB Ver. 1.1 compatible	
		Baud rate	12 Mbps (maximum)	
		Layout	See Fig 2.2	
		Description	See Table 2.6	
	Charge/Power supply terminals	Output voltage	DC5V±10%	
		Output current	2,500 mA (maximum)	
		Output current	Constant voltage method	
		Battery charge time	Approx. 4 hours for HA-D20BAT Approx. 7 hours for HA-D21LBAT	
Dimensions			Approx. 110(W) x 106(D) x 93(H) mm	
Weight			Approx. 310 g	

- Terminal layout

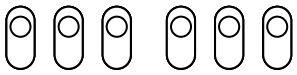


Fig 2.2

- Terminal layout and the description

Table 2.6

Terminal no.	Signal	Description	Direction
1	V BUS	Power from USB cradle	IN/OUT (see note)
2	V CRADLE	Power supply/Charge to IT-600	-
3	D +	USB D +	IN/OUT
4	USB_ID	Switch-over between USB host and USB client	OUT
5	D -	USB D -	IN/OUT
6	GND	GND	-

Note:

When the selector switch on the HA-D62IO is set to “USB Host”, this terminal receives the power ON/OFF control signal issued by the IT-600. Or, when it is set to “USB Client”, the terminal outputs the USB power (V BUS) to the IT-600.

2.4 HA-D32DCHG

Table 2.7 explains about the hardware specifications of the Dual Battery Charger (HA-D32DCHG).

Table 2.7

Item		Specification	Remark
Battery charge	Charge method	Constant voltage constant current	
	Charge period	Approx. 2 hours (for 1 pc x HA-D20BAT)	At room temperature
		Approx. 4 hours (for 1 pc x HA-D21LBAT)	
		Approx. 3.5 hours (for 2 pcs x HA-D20BAT)	
		Approx. 7 hours (for 2 pcs x HA-D21LBAT)	
Required power supply		AD-S42120BE (dedicated AC adaptor)	
Consumption current		Approx. 0.8 A (with single HA-D32DCHG)	
		Approx. 2.4 A (with three HA-D32DCHGs connected.)	
Operating temperature		Approx. 0 to 40 ºC	
Operating humidity		30 to 80 %RH	
No. of the chargers to be connected		3 pcs x HA-D32DCHG (maximum)	
Dimensions		Approx. 110 (W) x 104 (D) x 46 (H) mm	
Weight		Approx. 195 g	

2.5 HA-D30CHG

Table 2.8 explains about the hardware specifications of the Cradle-type Battery Charger (HA-D30CHG).

Table 2.8

Item		Specification		Remark
Input from AC adaptor	Input voltage	DC 5V±5%		
	Consumption current	DC5V approx. 2.5 A		
	Plug	EIAJ RC-5320A type 3		Center pin; +
	AC adaptor	AD-S15050BE		Dedicated AC adaptor
Terminal layout		Power supply	GND	
Power supply/Charge	Output voltage	DC5V±10%		
	Output current	2,500 mA (maximum)		
	Charge method	Constant voltage		
	Charge period	Approx. 4 hours for HA-D20BAT		
		Approx. 7 hours for HA-D21LBAT		
Dimensions and weight				
	Dimensions	Approx. 110 (W) x 106 (D) x 93 H) mm		
	Weight	Approx. 290 g		

2.6 AD-S15050BE

Table 2.9 explains the hardware specifications of the AC Adaptor (AD-S15050BE).

Table 2.9

Parameter		Specification	Remark
Original manufacturer's model no.		SQS15W5P-15	By Nagano Japan Radio Co., Ltd.
Type		Switching regulator	
Input requirements	Rated input voltage	AC100 to 240V	
	Input voltage tolerance	AC90 to 264V	Input voltage distortion should be 8 % or less.
	Nominal frequency	50 to 60 Hz	
	Frequency tolerance	49 to 61 Hz	
	Input current	1.1A or less (Vin=120V) 0.8A or less (Vin=230V)	
	Input power	56 W (130VA or less)	At input AC240V, 3A.
	No load input power	0.45W or less	At any input voltage condition.
	Inrush current	50Ao-p or less	At cold start.
	Power factor	35 % typical (AC100V) or more	At rated input and output
	Efficiency	70% typical or more	
	Leakage current	100 μA or less (Input 240V, 60Hz)	
Output requirements	Rated output voltage	DC5.0V	
	Rated output current	DC3.0A	Typical output; 15W
	Minimum output current	0 A	
	Overall regulation	4.75 to 5.25 V	
	Ripple noise	350 mVp-p or less	
Protections	Over-current protection	There should not be failure and the EUT should return to normal operation after removing the output short circuit. No breakdown, no smoking, no fire should occur.	
Dielectric strength	AC3.0 KV for 1 minute		Leak current = 10mA or less
Insulation resistance	DC500V 50MΩ or more		
Dimensions	Approx. 94.2 (D) x 40.0 (W) x 30.5 (H) mm		
Weight	Approx. 250 g		

2.7 AD-S42120BE

Table 2.10 explains the hardware specifications of the AC Adaptor (AD-S42120BE).

Table 2.10

Parameter		Specification	Remark
Original manufacturer's model no.		SEA60N2-12.0D	By Sanken Electric Co., Ltd. Japan
Input requirements	Rated input voltage	AC100 to 240V	
	Input voltage tolerance	AC90 to 265V	Input voltage distortion should be 5% or less.
	Nominal frequency	50 to 60 Hz	
	Frequency tolerance	48 to 62 Hz	
	Input current	1.1A or less (Vin=120V) 0.8A or less (Vin=230V)	
	No load input power	Less than 1W	At any input voltage condition.
	Inrush current	100Ao-p or less	At cold start.
	Power factor	43 % typ. (AC240V)	At rated input and output
	Leakage current	120 μA (240V, 50Hz)	Maximum
Output requirements	Rated output voltage	DC12.0V	
	Rated output current	DC3.5A	
	Output current range	0 to 4.37 A	
	Overall regulation	11.0 to 13.0 V	
	Ripple noise	350 mVp-p	
Protections	Over-current protection	Constant current, self-reset at 4.37A or more	
	Over-voltage protection	Shutdown at 18V or less	
	Thermal protection	The thermal protection shall start when case surface is at 120 ºC or less. The output shall be shut down.	
Dielectric strength	AC3.0 KV for 1 minute		Cut-off = 10 mA
Insulation resistance	DC 500V 50MΩ or more		
Dimensions	Approx. 114.5 (D) x 49.5 (W) x 27.0 (H) mm		
Weight	Approx. 270 g		

2.8 HA-D20BAT, HA-D21LBAT

Tables 2.11 and 2.12 explain about the hardware specifications of the Battery Pack (HA-D20BAT) and the Large-capacity Battery Pack (HA-D21LBAT).

HA-D20BAT (Battery Pack)

Table 2.11

Item	Specification	Remark
Nominal capacity	1850 mAh	
Nominal voltage	3.7 VDC	
Dimensions	Approx. 52.5(W) x 40(L) x 13.5(H) mm	
Weight	Approx. 46g	
Accessory	Soft case	

HA-D21LBAT (Large-capacity Battery Pack)

Table 2.12

Item	Specification	Remark
Nominal capacity	3700 mAh	
Nominal voltage	3.7 VDC	
Dimensions	Approx. 52.5 (W) x 40 (L) x 25 (H) mm	
Weight	Approx. 86g	
Accessory	Soft case	

2.9 HA-D94CFU2

Table 2.13 explains about the hardware specifications of the CF Card Extension Unit.

Table 2.13

Item	Specification	Remark
CF card slot	Compact Flash type I and II cards (3.3 volt)	
Output	3.3 ± 0.165 V, Max. 1.0A	
Dimensions	Approx. 76 (W) x 79 (D) x 16 (H) mm	With cover
Weight	Approx. 45 g	With cover

3. Product Identification and Reference Numbers

On the back of the IT-600 and its options, there is a bar code and numbers printed on a label as shown in Fig. 3.1. This bar code is represented by 15 digits of Code128 symbology and by alphanumeric beneath the bar code. The numbers from 1 to 9 in the figure represent identification and references of each terminal or option. The numbers from 10 to 15 represent a manufacturing reference which is reserved by the manufacturer. See the figure below for each meaning.

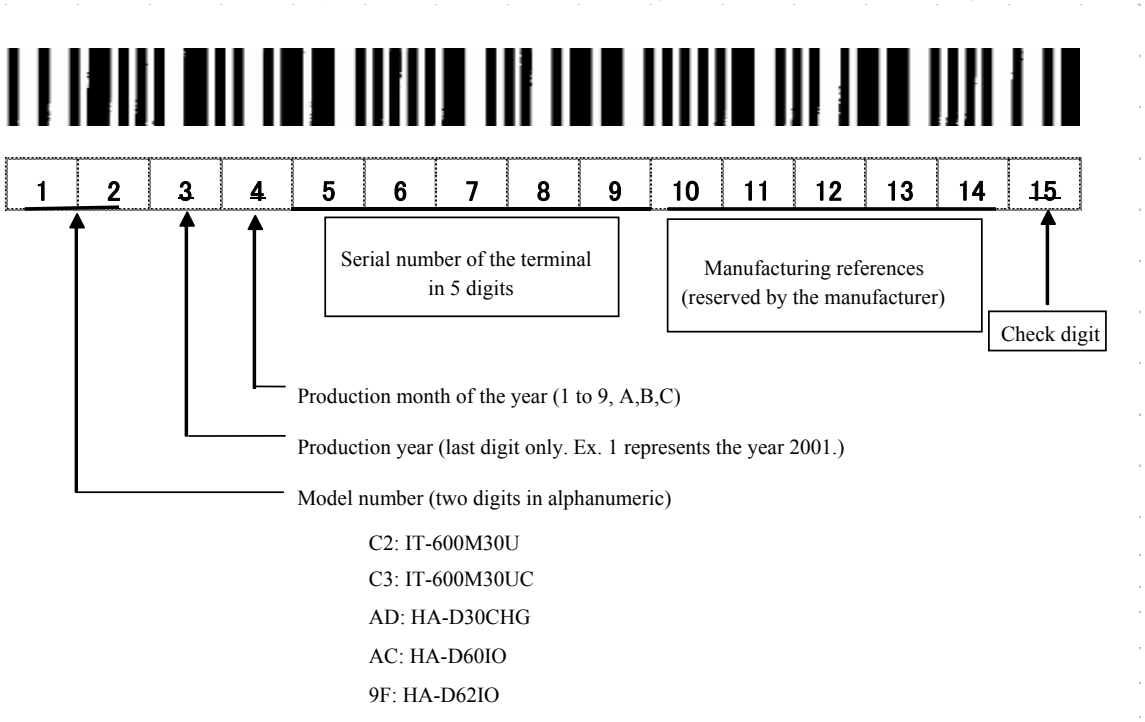

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Serial number of the terminal in 5 digits
Manufacturing references (reserved by the manufacturer)
Check digit
Production month of the year (1 to 9, A,B,C)
Production year (last digit only. Ex. 1 represents the year 2001.)
Model number (two digits in alphanumeric)
C2: IT-600M30U
C3: IT-600M30UC
AD: HA-D30CHG
AC: HA-D60IO
9F: HA-D62IO

Fig. 3.1

4. Quality References

This chapter will describe about references of the IT-600 and its dedicated options concerned with environmental performance, compliance, mechanical and electric durability, etc.

4.1 Environmental Performances

4.1.1 IT-600

Table 4.1 explains about the environmental performances on all models of IT-600 series.

Table 4.1

Item		Specification	Condition
Temperature			
	Operation	-10 to 50 ºC	0 to 40 ºC for charging battery pack
	Non-operation	-20 to 60 ºC	
Humidity			
	Operation	10 to 80 %RH	No condensation
	Non-operation	5 to 90 %RH	
Storage			
	Temperature	-20 to 60 ºC	
	Humidity	5 to 90 %RH	No condensation.
Dust and water-splash proof			
		IP54 level	Compliant with IEC60529 standard

4.1.2 HA-D60IO

Table 4.2 explains about the environmental performances on the USB Cradle (HA-D60IO).

Table 4.2

Item		Specification	Condition
Temperature			
	Operation	0 to 40 ºC	
	Non-operation	-20 to 60 ºC	
Humidity			
	Operation	30 to 80 %RH	No condensation
	Non-operation	10 to 90 %RH	
Storage in carton box			
	Temperature	-20 to 60 ºC	
	Humidity	10 to 90 %RH	No condensation
Dust and water-splash proof			
		Not applicable	

4.1.3 HA-D62IO

Table 4.3 explains about the environmental performances on the Ethernet Cradle (HA-D62IO).

Table 4.3

Item		Specification	Condition
Temperature			
	Operation	0 to 40 ℃	
	Non-operation	-20 to 60 ℃	
Humidity			
	Operation	30 to 80 %RH	No condensation
	Non-operation	10 to 90 %RH	
Storage in carton box			
	Temperature	-20 to 60 ℃	
	Humidity	10 to 90 %RH	No condensation
Dust and water-splash proof			
		Not applicable	

4.1.4 HA-D32DCHG

Table 4.4 explains about the environmental performances of the Dual Battery Charger (HA-D32DCHG).

Table 4.4

Item		Specification	Condition
Temperature			
	Operation	0 to 40 ℃	
	Non-operation	-20 to 60 ℃	
Humidity			
	Operation	30 to 80 %RH	No condensation
	Non-operation	10 to 90 %RH	
Storage in carton box			
	Temperature	-20 to 60 ℃	
	Humidity	10 to 90 %RH	No condensation
Dust and water-splash proof			
		Not applicable	

4.1.5 HA-D30CHG

Table 4.5 explains about the environmental performances on the Cradle-type Battery Charger (HA-D30CHG).

Table 4.5

Item		Specification	Condition
Temperature			
	Operation	0 to 40 ºC	
	Non-operation	-20 to 60 ºC	
Humidity			
	Operation	30 to 80 %RH	No condensation
	Non-operation	10 to 90 %RH	
Storage in carton box			
	Temperature	-20 to 60 ºC	
	Humidity	10 to 90 %RH	No condensation
Dust and water-splash proof			
		Not applicable	

4.1.6 HA-D94CFU2

Table 4.6 explains about the environmental performances on the CF Card Extension Unit.

Table 4.6

Item		Specification	Condition
Temperature			
	Operation	-10 to 50 ºC	
	Non-operation	-20 to 60 ºC	
Humidity			
	Operation	10 to 80 %RH	No condensation
	Non-operation	5 to 90 %RH	
Storage in carton box			
	Temperature	-20 to 60 ºC	
	Humidity	90 %RH or less	No condensation
Dust and water-splash proof			
		IP64 level	Compliant with IEC60529

4.1.7 AD-S15050BE

Table 4.7 explains environmental performance on the AC Adaptor (AD-S15050BE).

Table 4.7

Item		Specification	Condition
Temperature			
	Operation	0 to 40 ºC	
	Storage	-20 to 60 ºC	
Humidity			
	Operation	20 to 85 %RH	No condensation
	Storage	10 to 90 %RH	

4.1.8 AD-S42120BE

Table 4.8 explains environmental performance on the AC Adaptor (AD-S42120BE).

Table 4.8

Item		Specification	Condition
Temperature			
	Operation	0 to 40 ºC	
	Storage	-20 to 80 ºC	
Humidity			
	Operation	20 to 80 %RH	No condensation
	Storage	10 to 90 %RH	

4.2 Electrical Performances

4.2.1 IT-600

Table 4.9 explains about the electrical performances on all models of IT-600 series.

Table 4.9

Item		Specification	Remark
Power consumption			
		DC1.9A	- IT-600M30U
		DC2.0A	- IT-600M30UC
Anti-static strength			
	Malfunction	±4 KV (in contact)	- 150 pF, 330ohm
	Destruction	±12 KV (in air)	

4.2.2 HA-D60IO

Table 4.10 explains about the electrical performances on the USB Cradle (HA-D60IO).

Table 4.10

Item		Specification	Remark
Input voltage		DC12V±5%	
Anti-static strength			
	In contact	±6 KV	150 pF, 330 ohm
	In air	±8 KV	
Power interruption		10 milliseconds or less	
Line noise strength			
	Malfunction	1,000 V	- Pulse frequency: 5KHz - Burst cycle: 300 milliseconds - Number of pulses: 75 - Burst interval: 15 milliseconds

4.2.3 HA-D62IO

Table 4.11 explains about the electrical performances on the Ethernet Cradle (HA-D62IO).

Table 4.11

Item		Specification	Remark
Input voltage		DC12V±5%	
Anti-static strength			
	In contact	±6 KV	150pF, 330 ohm
	In air	±8 KV	
Power interruption		10 milliseconds or less	
Line noise strength			
	Malfunction	1,000V	- Pulse frequency: 5KHz - Burst cycle: 300 milliseconds - Number of pulses: 75 - Burst interval: 15 milliseconds

4.2.4 HA-D32DCHG

Table 4.12 explains about the electrical performances on the Dual Battery Charger (HA-D32DCHG).

Table 4.12

Item		Specification	Remark
Consumption current			
		Approx. 0.03 A	- While the battery pack is not being installed.
		Approx. 0.8 A	- While the battery pack is installed and it is being charged.
Input voltage		DC12V±5%	
Anti-static strength			
	In contact	±6 KV	- 150 pF, 330 ohm
	In air	±8 KV	
Line noise strength			
	Malfunction	1,000 V	- Pulse frequency: 5KHz - Burst cycle: 300 milliseconds - Number of pulses: 75 - Burst interval: 15 milliseconds

4.2.5 HA-D30CHG

Table 4.13 explains about the electrical performances on the Cradle-type Battery Charger (HA-D30CHG).

Table 4.13

Item		Specification	Remark
Input voltage		DC5V±5%	
Anti-static strength			
	In contact	±6 KV	- 150 pF, 330 ohm
	In air	±8 KV	
Power interruption		10 milliseconds or less	
Line noise strength			
	Malfunction	1,000 V	- Pulse frequency: 5 KHz - Burst cycle: 300 milliseconds - Number of pulses: 75 - Burst interval: 15 milliseconds

4.2.6 HA-D94CFU2

Table 4.14 explains about the electrical performances on the CF Card Extension Unit.

Table 4.14

Item		Specification	Remark
Power consumption		3.3 to 5 V/1.1 A	
Anti-static strength			
	In contact	±4 KV	- 150 pF, 330 ohm
	In air	±8 KV	
	Malfunction	±12 KV	

4.2.7 AD-S15050BE

Table 4.15 explains electrical performance on the AC Adaptor (AD-S15050BE).

Table 4.15

Item		Specification	Remark
Withstanding noise			
	Lighting surge	L-L: ±2.0 KV / L-FG: ±2.0 KV	No abnormal operation or breakdown should occur.
	Anti-static strength (ESD)	±6 KV (direct contact)	No malfunction.
		±10 KV (direct contact)	No damage.

4.2.8 AD-S42120BE

Table 4.16 explains electrical performance on the AC Adaptor (AD-S42120BE).

Table 4.16

Item		Specification	Remark
Withstanding noise			
	Lighting surge	L-L:1.0 KV / L-FG: 2.5 KV	No damage.
	Anti-static strength (ESD)	8 KV	No malfunction, no damage.
	Implant noise	L-L / L-FG: 1 KV	No malfunction, no damage.

4.3 Mechanical Performances

4.3.1 IT-600

Table 4.17 explains about the mechanical performances, vibration and impact durability, on all models of IT-600 series.

Table 4.17

Item	Specification	Condition
Impact durability (in height of fall)	120 cm	- Onto concrete floor. - One time on each of the 6 sides and 4 corners.
Impact durability (in height of fall)		
In individual carton box	70 cm	- 1 cycle on each of the 6 sides and 1 corner.
In master carton	70 cm	
Resistance to vibration	1.5 G	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 30 minutes

4.3.2 HA-D60IO

Table 4.18 explains about the mechanical performances, vibration and impact durability, on the USB Cradle (HA-D60IO).

Table 4.18

Item	Specification	Condition
Resistance to vibration	1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 30 minutes - While the power is turned on and IT-600 is not being mounted.
Resistance to vibration (in carton box)	1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 15 minutes
Impact durability (in height of fall)		
In bare condition	70 cm	- 1 cycle on each of the 6 sides - 6 faces, 1 corner and 3 edges - Onto P tile floor.
In individual carton	70 cm or less	
In master carton	50 cm or less	

4.3.3 HA-D62IO

Table 4.19 explains about the mechanical performances, vibration and impact durability, on the Ethernet Cradle (HA-D62IO).

Table 4.19

Item	Specification	Condition
Resistance to vibration	1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 30 minutes - While the power is turned on and IT-600 is not being mounted.
Resistance to vibration (in carton box)	1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 15 minutes
Impact durability (in height of fall)		
In bare condition	70 cm	- 1 cycle on each of the 6 sides - 6 faces, 1 corner and 3 edges - Onto P tile floor.
In individual carton	70 cm or less	
In master carton	50 cm or less	

4.3.4 HA-D32DCHG

Table 4.20 explains about the mechanical performances, vibration and impact durability, on the Dual Battery Charger (HA-D32DCHG).

Table 4.20

Item	Specification	Condition
Resistance to vibration (in bare condition)	1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 15 minutes - While the power is being turned off.
Resistance to vibration (in carton box)	1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 15 minutes
Impact durability (in height of fall)		
In bare condition	70 cm	- 1 cycle on each of the 6 sides - 6 faces, 1 corner and 3 edges - On to concrete floor.
In individual carton	70 cm or less	
In master carton	60 cm or less	

4.3.5 HA-D30CHG

Table 4.21 explains about the mechanical performances, vibration and impact durability, on the Cradle-type Battery Charger (HA-D30CHG).

Table 4.21

Item		Specification	Condition
Resistance to vibration		1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 15 minutes - While the power is turned on and IT-600 is not being mounted.
Resistance to vibration (in carton box)		1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 15 minutes
Impact durability (in height of fall)			
	In bare condition	70 cm	- 1 cycle on each of the 6 sides - 6 faces, 1 corner and 3 edges - On to concrete floor.
	In individual carton	70 cm or less	
	In master carton	50 cm or less	

4.3.6 HA-D94CFU2

Table 4.22 explains about the mechanical performances, vibration and impact durability, on the CF Card Extension Unit.

Table 4.22

Item		Specification	Condition
Resistance to vibration		1.5 G or less	- 10 to 55 Hz - In X,Y, and Z directions - Reciprocally for 30 minutes - With HA-D94CFU2 being attached on IT-600.
Impact durability (in height of fall)			
	In bare condition	120 cm	- One time on each of the 6 sides and 4 corners. - On to concrete floor. - With HA-D94CFU2 being attached on IT-600.
	In individual carton	70 cm or less	- 1 cycle on each of the 6 sides - 6 faces, 1 corner and 3 edges - On to concrete floor.
	In master carton	50 cm or less	

4.3.7 AD-S15050BE

Table 4.23 explains mechanical performance, vibration and impact durability, on the AC Adaptor (AD-S15050BE).

Table 4.23

Item		Specification		Condition
Resistance to vibration		Frequency	10 to 100 Hz	
		Acceleration	0.5 G	
		Direction	X, Y, Z	
		Vibration period	10 minutes	
		Sweep time	1 minute	
Impact durability (in height of fall)				
	In bare condition	50 cm		Lift up the EUT up to a height of 50 cm and then drop it onto a hard board. This cycle is repeated 3 times. No damage to be found on the EUT. The EUT is turned off during the drop test.

4.3.8 AD-S42120BE

Table 4.24 explains mechanical performance, vibration and impact durability, on the AC Adaptor (AD-S42120BE).

Table 4.24

Item		Specification		Condition
Resistance to vibration		Frequency	10 to 200 Hz	
		Acceleration	19.6 m/S²	
		Sweep time	1 minute	
		Direction	X, Y, Z	
		Vibration period	30 minutes	
Impact durability (in height of fall)				
	In bare condition	100 cm		Lift up the EUT up to a height of 100 cm and then drop it onto oak board. No damage to be found.

4.4 Reliability

4.4.1 IT-600

Table 4.25 explains about reliability of the main parts on all models of IT-600 series.

Table 4.25

Item			Specification	Condition
Service life				
	Backlight		15,000 hours	
	LCD		50,000 hours	
	Touch panel key input		800,000 times	- With 8.60º rubber with load of 250 g applied
	Writing on touch panel		100,000 Katakana characters	- With 0.8R polyester stylus with load of 250 g applied
	Discharge/charge cycle longevity of battery pack		500 times	- Standard, Large-capacity battery packs - 50% or more of the initial capacity
	Battery pack storage period (recommended)		One year or less	- At temperature in the range of -25 to 30 ºC - At 80% charge level
	Discharge/charge cycle longevity of memory backup battery		20,000 times	- Memory backup for a period of 10 minutes
			40 times	- Memory backup until the cut-off voltage level
	Plug in/unplug the connector	miniSD card	5,000 times	
	Digital camera		7,250 hours	
	LED light		1,000 hours	- Until when the brightness becomes 50%
	Vibrator		300,000 cycles	- One cycle; 0.5s ON, 0.5s OFF
	Key input durability	Reset switch	1,000 times	
		Trigger keys	1,000,000 times	
		Keys (except the Trigger keys)	500,000 times	
	Mounting /removing durability	Battery pack	5,000 times	
		On Cradle-type charger	10,000 times	
		On USB cradle	10,000 times	
MTBF				
	Electronic parts		45,381 hours	- Main PCB

4.4.2 HA-D60IO

Table 4.26 explains about reliability of the main parts on the USB Cradle (HA-D60IO).

Table 4.26

Item		Specification	Condition
MTBF for electronic parts		20,000 hours	
Installing and removing	USB port connector	500 times	
	LAN port connector	500 times	
Mounting IT-600 on the cradle and removing		45,000 times	
Switching	Selector switch (USB Host or USB Client)	500 times	One reciprocal switching is counted as one time.
Installing AC adaptor to and removing from	AC adaptor jack	1,500 times	

4.4.3 HA-D62IO

Table 4.27 explains about reliability of the main parts on the Ethernet Cradle (HA-D62IO).

Table 4.27

Item		Specification	Condition
MTBF for electronic parts		110,000 hours	
Installing and removing	USB client port's connector	500 times	
	USB host port's connector	500 times	
Mounting IT-600 and removing		45,000 times	
Switching	Selector switch (USB Host or USB Client)	500 times	One reciprocal switching as one time
Installing AC adaptor to and removing from	AC adaptor jack	1,500 times	

4.4.4 HA-D32DCHG

Table 4.28 explains about reliability of the main parts on the Dual Battery Charger (HA-D32DCHG).

Table 4.28

Item		Specification	Condition
MTBF for electronic parts		50,000 hours	
Mounting a battery pack and removing		5,000 times	
Connecting to the joint connector and removing from		250 times	
Installing AC adaptor to and removing from	AC adaptor jack	1,500 times	

4.4.5 HA-D30CHG

Table 4.29 explains about reliability of the main parts on the Cradle-type Battery Charger (HA-D30CHG).

Table 4.29

Item		Specification	Condition
MTBF for electronic parts		20,000 hours	
Mounting IT-600 on and removing from		45,000 times	
Connecting to the joint connector and removing from		250 times	
Installing AC adaptor to and removing from	AC adaptor jack	1,500 times	

4.4.6 HA-D94CFU2

Table 4.30 explains about reliability of the main parts on the CF Card Extension Unit.

Table 4.30

Item	Specification	Condition
MTBF for electronic parts	704,139 hours	for only HA-D94CFU2
	42,633 hours	Attaching HA-D94CFU2 on IT-600

4.4.7 AD-S15050BE

Table 4.31 explains reliability on the AC Adaptor (AD-S15050BE).

Table 4.31

Item	Specification	Remark
MTBF	50,000 hours or more	Compliant with JEITA requirement.

JEITA: Japan Electronics and Information Technology Industries Association

4.4.8 AD-S42120BE

Table 4.32 explains reliability on the AC Adaptor (AD-S42120BE).

Table 4.32

Item	Specification	Remark
MTBF	100,000 hours or more	

4.5 Compliance

4.5.1 IT-600

Table 4.33 explains about compliance with the relevant European standards for all models of IT-600 series.

Table 4.33

Model no.	FCC, IC standards / UL approval					
	FCC Part 15 Subpart B	FCC Part 15 Subpart C	RSS-GEN	RSS-210	Bluetooth Logo License	UL60950-1
IT-600M30U	Yes	Yes	Yes	Yes	Yes	Yes
IT-600M30UC	Yes	Yes	Yes	Yes	Yes	Yes

IC: Industry Canada

4.5.2 HA-D60IO

Table 4.34 explains about compliance with the relevant standards for the USB Cradle (HA-D60IO).

Table 4.34

Model no.	EMC EN55022:1998+A1: 2000+A2:2003	EMI EN55024:1998+A1:2001 +A2:2003	EN61000-3-2:2000, EN61000-3-3:1995+A1 :2001
HA-D60IO	Yes	Yes	Yes

4.5.3 HA-D62IO

Table 4.35 explains about compliance with the relevant European standards for the Ethernet Cradle (HA-D62IO).

Table 4.35

Model no.	EMC EN55022:1998+A1: 2000+A2:2003	EMI EN55024:1998+A1:2001 +A2:2003	EN61000-3-2:2000, EN61000-3-3:1995+A1 :2001
HA-D62IO	Yes	Yes	Yes

4.5.4 HA-D32DCHG

Table 4.36 explains about compliance with the relevant European standards for the Dual Battery Charger (HA-D32DCHG).

Table 4.36

Model no.	EMC EN55022:1998+A1:2000+A2:2003	EMI EN55024:1998+A1:2000+A2:2003
HA-D32DCHG	Yes	Yes

4.5.5 HA-D30CHG

Table 4.37 explains about compliance with the relevant European standards for the Cradle-type Battery Charger (HA-D30CHG).

Table 4.37

Model no.	EMC EN55022:1998	EMI EN55024:1998	EN61000-3
HA-D30CHG	Yes	Yes	Yes

4.5.6 HA-D94CFU2

Table 4.38 explains about compliance with the relevant European standards for the CF Card Extension Unit.

Table 4.38

Model no.	EMC EN55022:1998	EMI EN55024:1998	EN61000-3
HA-D94CFU2	Yes	Yes	Yes

4.5.7 AD-S15050BE

Table 4.39 explains compliance with the relevant standards and requirement for the AC Adaptor (AD-S15050BE).

Table 4.39

Model no.	Standard / UL requirement	
	UL/cUL (Safety)	FCC Part 15 Subpart J Class B (EMI)
AD-S15050BE	Yes	Yes

Note:
The certificates for the standards and approval have been granted to the original OEM manufacturer.

4.5.8 AD-S42120BE

Table 4.40 explains compliance with the relevant standards and requirement for the AC adaptor (AD-S42120BE).

Table 4.40

Model no.	Standard / UL requirement	
	UL1950 3rd Edition, cUL (Safety)	FCC Class B (EMC)
AD-S42120BE	Yes	Yes

Note:
The certificates for the standards and approval have been granted to the original OEM manufacturer.